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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,991	07/24/2003	Brig Barnum Elliott	BBNT-P01-036	1710
28120 7590 02/09/2007 FISH & NEAVE IP GROUP ROPES & GRAY LLP ONE INTERNATIONAL PLACE BOSTON, MA 02110-2624			EXAMINER CAI, WAYNE HUU	
			ART UNIT	PAPER NUMBER
			2617	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/09/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/625,991	<b>Applicant(s)</b> ELLIOTT, BRIG BARNUM	
	<b>Examiner</b> Wayne Cai	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 28 is/are rejected.
- 7) ☒ Claim(s) 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on July 24, 2003, January 23, 2004, September 27, 2004, and March 09, 2005 are being considered by the examiner.

### ***Drawings***

The drawings were received on July 24, 2003. These drawings are acceptable.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,847,867. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

**Regarding claim 1**, claim 1 of U.S. Patent No. 6,847,867 discloses a satellite network (col. 9, line 43) comprising:

inter-satellite links (col. 9, lines 46-48);

backbone satellites (i.e., the first backbone satellite) configured to act as routers for data units transmitted through the network, the backbone satellites communicating with one another through the inter-satellite links (col. 9, lines 46-48);

access links (i.e., the communication between the host satellite and the first backbone satellite);

user satellites (i.e., the host satellite) configured to connect with the network via the backbone satellites through the access links (col. 9, lines 45-46);

up/down links (i.e., the directional link between the first backbone satellite and the second backbone satellite or proxy satellite); and

ground stations (i.e., the second backbone satellite or proxy satellite) configured to connect to the backbone satellites (i.e., the first backbone satellite) through the up/down links,

wherein the inter-satellite links and the up/down links include directional transmissions from the user satellites and the access links include omni-directional transmissions from the user satellites (col. 9, lines 46-51).

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In addition, independent claim 1 of U.S. Patent No. 6,847,867 is more specific compare to independent claim 1 of present application. Hence, the scope of claims of present application is now broader than U.S. Patent No. 6,847,867. Many decisions support the fact that a broad or generic claim is obvious from a specific claim, i.e., an obvious variation. See *In re Van Ornum and Stang*, 214 USPQ 761 (CCPA 1982); *In re Goodman* (CA FC) 29 USPQ2d 2010 (12/3/1993); *In re Vogel and Vogel*; 164 USPQ 619 (CCPA 1970); *In re Berg* (CA FC) 46 USPQ2d 1226 (3/30/1998); *Eli Lilly and Co. v. Barr Laboratories Inc.*, 58 USPQ2d 1865 (CA FC 2001). It is well settled that omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before. This notion is supported by *In re KARLSON*, 136 USPQ 184 (1963); *In re Nelson*, 95 USPQ 82 (CCPA 1952); and *In re Eliot*, 25 USPQ 111 (CCPA 1935).

**With respect to claims 2-9**, independent claim 1 of U.S. Patent No. 6,847,867 teaches all limitations above, and also discloses claimed features of claims 2-7.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 10, 12, 13, 17, 23-25, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Futernik (US 2003/0137930).

**Regarding claims 10, and 28**, Futernik discloses a method, and a means for adding a satellite into a satellite network, the method comprising:

determining, at the satellite, an orbital location of the satellite (paragraph 0027 and 0034);

selecting a ground station with which to communicate based on the determined orbital location (paragraph 0023);

receiving, from the selected ground station, at least one of location and orbital information of other satellites in the satellite network (i.e., the topology of the network) ;  
and

transmitting the location of the satellite to the selected ground station (paragraphs 0033-0035).

**Regarding claim 12**, Futernik discloses all limitations within claim as described above. Futernik also discloses creating inter-satellites links with other satellites in the satellite network (paragraph 0024).

**Regarding claim 13**, Futernik discloses all limitations within claim as described above. Futernik also discloses dynamically modifying the inter-satellite links based on changing orbital information of the satellite and the other satellites (i.e., update the routing table. Also paragraph 0004).

**Regarding claim 17**, Futernik discloses all limitations within claim as described above. Futernik also discloses wherein the satellite and the other satellites communicate over the inter-satellite links based on the Internet Protocol (IP) (paragraph 0004).

**Regarding claim 23**, Futernik discloses a method of operating a satellite network including backbone satellites and user satellites, the method comprising:

receiving position information from the backbone satellites (i.e., priori knowledge of satellite locations);

calculating network topology information based on the position information (paragraphs 0033, and 0034); and

creating inter-satellite links, via directional transmitters/receivers, between the backbone satellites based on the network topology information (paragraphs 0034, and 0035); and

communicating packet data through the satellite network over the inter-satellite links (paragraph 0035).

**Regarding claims 24, and 25**, it is inherent that the position of the backbone satellites is orbital information or location information of the backbone satellites.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Capots et al. (hereinafter "Capots, US 2004/0192197) in view of Wiedeman et al. (hereinafter "Wiedeman", US 6,661,996).

**Regarding claim 18**, Capots discloses a satellite comprising:

- a router (paragraph 0065);
- a directional communication links (paragraph 0059); and
- a second input/output device configured to communicate with other satellites using the directional communication links which are higher capacity links than the omni-directional radio frequency links (paragraphs 0059, 0075). The Examiner further notes that the directional communication links is higher in capacity compare to omni-directional link as known in the art.

Capots does not specifically discloses:

- omni-directional radio frequency links;
- a first input/output device configured to communicate with other devices using the omni-directional radio frequency links.

In a similar endeavor, Wiedeman discloses a satellite communication system providing multi-gate diversity to a mobile user terminal. Wiedeman also discloses omni-directional radio frequency links, and a first input/output device configured to communicate with other devices using the omni-directional radio frequency links (col. 1, lines 27-52).



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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Capots in view of Wiedeman.

The motivation/suggestion for doing so would have been to conserve the power consumption.

**Regarding claim 20**, although the cited references do not specifically teach the router further comprises: a processor, a memory, and a forwarding engine. However, it is obvious and/or well known in the art to include the listed components in order to process information and communicate with other satellites or ground station. Thus, these features are not novel.

**Regarding claims 21, and 22**, although the cited references do not specially disclose second input/output device forms a laser communication link specifically teach or suggest wherein the second input/output device forms a laser communication link, or radio frequency communication link. However, it is obvious and/or well known in the art to include a laser or radio frequency communication as a form of transmitting information in order to provide a concentrated energy to communicate with other devices.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Capots et al. (hereinafter "Capots, US 2004/0192197) in view of Wiedeman et al. (hereinafter "Wiedeman", US 6,661,996), and further in view of Biswas et al. (hereinafter "Biswas", US 2003/0147142).

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**Regarding claim 19**, Capots and Wiedeman disclose all limitations within claims as described above, but do not specifically disclose a third input/output device configured to communicate with ground stations using directional communication links.

In a similar endeavor, Biswas discloses a method and apparatus for multibeam beacon laser assembly for optical communications. Biswas also discloses a third input/output device configured to communicate with ground stations using directional communication links (paragraph 0006).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Capots in view of Wiedeman, and further in view of Biswas.

The motivation/suggestion for doing so would have been to provide a focus signal strength to communicate with the ground station.

Claims 11, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futernik (US 2003/0137930) in view of Kleiner et al. (hereinafter "Kleiner", US 6,839,519).

**Regarding claim 11**, Futernik discloses all limitations within claim as described above, but does not specifically disclose wherein selecting the ground station is based on a prestored list of ground stations and locations corresponding to the ground stations. However, it obvious to one skilled in the art that there must be a prestored list of ground stations in order for the satellite to know their relationship with the ground stations and have communications with those ground stations. Thus, the claimed feature is not novel.

**Regarding claim 14**, Futernik discloses all limitations within claim as described above, but does not specifically disclose wherein the inter-satellite links are formed with directional receivers and transmitters.

In a similar endeavor, Kleiner discloses a laser crosslink methods and apparatus. Kleiner also discloses wherein the inter-satellite links are formed with directional receivers and transmitters (col. 2, lines 44-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Futernik in view of Kleiner.

The motivation/suggestion for doing so would have been to have focus signal strength to transmit signals between satellites.

**Regarding claim 15**, Futernik discloses all limitations within claim as described above, but does not specifically disclose wherein the inter-satellite links are formed between satellites in different orbits

In a similar endeavor, Kleiner discloses a laser crosslink methods and apparatus. Kleiner also discloses wherein the inter-satellite links are formed between satellites in different orbits (col. 2, lines 22-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Futernik in view of Kleiner.

The motivation/suggestion for doing so would have been to provide a wide coverage area.

**Regarding claim 16**, Futernik and Kleiner disclose all limitations within claims above. Kleiner also discloses wherein the different orbits include at least two of geostationary orbits, medium earth orbits, low earth orbits, highly inclined orbits, eccentric orbits, or Moliya orbits (col. 2, lines 22-38).

### ***Allowable Subject Matter***

Claims 26, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday - Thursday from 7:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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